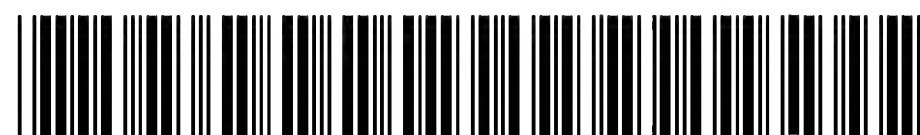




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(54) Method for the sheathing of buildings by means of double glass façade panels.

(57) The panels (1) are formed by two glass sheets (101, 102) separated by an air chamber (103). One of said glass sheets (101) is of greater dimensions than the other sheet (102). The two glass sheets (101, 102) are at first connected together by means of a bead of mastic (3) applied on the facing sides of the two glass sheets (101, 102) at a certain distance (d) from the peripheral rim of the sheet (102) of

minor dimensions, with the interposition between said two glass sheets of a spacing member (2). The thus formed composite panel (1) is fastened to a supporting structure of the building façade by mechanically securing the peripheral edges (104) of the sheet (102) of minor dimension of each panel (1) to a profiled element associated to said supporting structure.

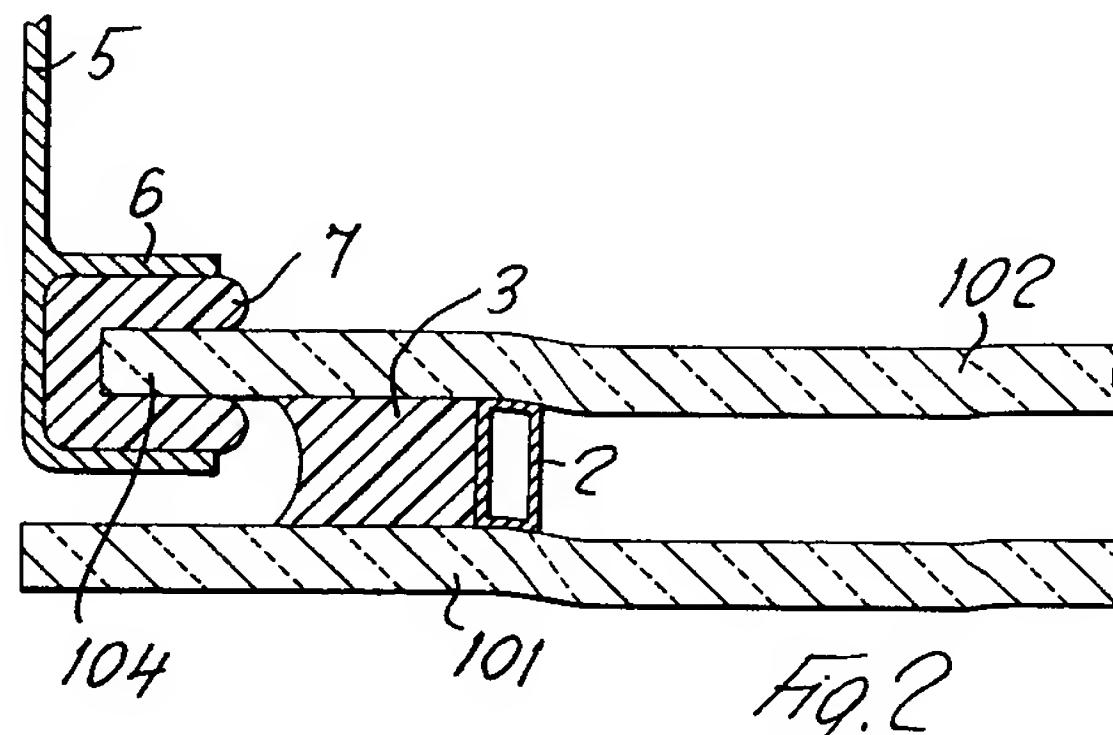
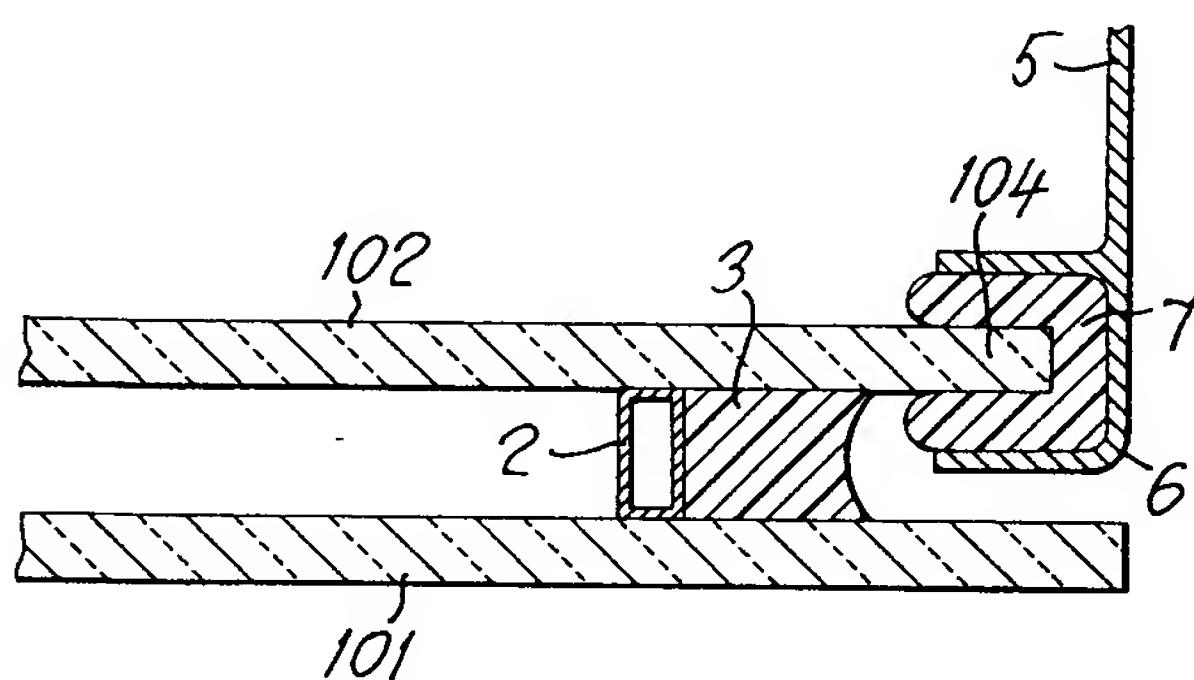


Fig. 2

This invention relates to the sheathing of the façades of buildings by means of double glass panels, and to a method for the manufacture of said glass panels and for their fastening to the supporting structure of the façade of a building.

From GB-A-2 179 391 a method is known for supporting the two glass sheets of a double glazed window on a metal supporting frame of a building or the like construction, according to which the said supporting frame is formed on at least two vertical sides with an open channel profile for accomodating and firmly holding the edges of the inner glass sheet of the double glazed window, whilst the outer glass sheet of said window is secured in place by means of a bead of a so-called "structural" silicone mastic applied between the metal frame and the rear side of said outer glass sheet.

However, the application of the above structural silicone bead in the building yard is a very costly operation in order to obtain very high standard of adhesion between the glass sheet and the metallic frame, and therefore the high safety standards which are requested, bearing in mind that the said glass sheets are suspended to the building façade only by virtue of the above adhesion forces.

The present invention aims to obviate the above problems of the prior art, by providing a method for the sheathing of the building façades by means of double glass panels which, besides assuring a safe and pleasant anchoring of the said glass panels to the building façade, is less expensive than the prior art sheathing systems.

According to the invention, the above objects are obtained by a method of manufacture of panels for the sheathing of building façades, according to which said panels are formed by two glass sheets separated by an air chamber, and in which one of said glass sheets is of greater dimensions than the other sheet, characterized by the fact that the said two glass sheets are at first connected together by means of a bead of mastic applied on the facing sides of the two glass sheets at a certain distance from the peripheral rim of the sheet of minor dimensions, with the interposition between said two glass sheets of a spacing member, the thus obtained composite panel being fastened to the supporting structure of the building façade by mechanically securing the peripheral edge of the sheet of minor dimension of each panel to a part associated to said supporting structure.

Further objects and advantages of the present invention will become evident from the following detailed description of some embodiments of the invention, made with reference to the accompanying drawings, in which:

Figure 1 is a diagrammatical cross sectional view through a composite glass panel according to the invention.

Figure 2 is a diagrammatical cross sectional view, with parts broken away, showing the mode of assembling of two contiguous panels according to the invention on the mounting frame of a building, or the like structure, and

Figure 3 is a view similar to that of Figure 2, showing the application of a sealing mastic, according to a further embodiment of the invention.

With reference to the drawings, and with particular reference to Figure 1, numeral 1 denotes the composite glass panel according to the invention.

The said panel 1 comprises a first glass sheet 101 which, when the panel 1 is assembled on a building, is exposed to the exterior of the building as an element of the building facade, and a second glass sheet 102, constituting the inner glass sheet. The height and width of the glass sheet 102 are minor than the corresponding measures of the glass sheet 101. The sheets 101 and 102 are spaced apart by means of a suitable frame 2, so as to provide an air gap or chamber 103 between the two sheets 101 and 102. The frame 2 is preferably formed by tubular elements, as shown in the drawings, and most preferably said tubular elements are provided with through bores (not shown) putting them into communication with the chamber 103. Advantageously, the said tubular elements are filled with a suitable hygroscopic material, such as for instance silica gel.

The two sheets 101 and 102 with the interposed frame 2 are connected together by means of a continuous bead of a mastic, and particularly by means of a bead 3 of structural silicone.

As clearly shown in the drawings, the bead 3 is formed all around the panel 1 at a certain distance "d" from the peripheral rim of sheet 102, so as to leave a peripheral edge 104 for the purpose to be described later.

The two sheets 101 and 102 will be connected together in a firm and steady manner thanks to the bead 3 of mastic. Thanks to the fact that the bead 3 is formed of silicone, same will resist to all wheather changes and temperatures, without any appreciable ageing. Thanks to the fact that the silicone bead 3 is laid in place in a specialized factory instead of in the building yard, the sheets 101 and 102 will be connected together in a very firm and safe manner, which is impossible to obtain by operating in the building yard, thus assuring the maximum safety to the bond between said sheets in the resulting panel 1.

Also from the economic standpoint, this mode of assembling the panels 1 is advantageous with respect to the prior art technique.

In Figure 2 the mode of fastening the panels 1 to the building frame (or to a part associated to the said frame) is shown.

With reference to Figure 2, numeral 5 is a frame element connected to, or forming part of the building frame (not shown). The said frame element 5 is provided with a C shaped channel profile 6, extending along its edges, in which the edge portions 104 of the panels 1 are accommodated, with the interposition of a resilient gasket member 7. Additional means may be provided, for additionally securing the edge portions 104 of the panels 1 to the said channel profiles 6.

As shown in Figure 3, an additional sealing bead 8 may be formed between the frame member 6 and the rear side of the glass sheet 101 of panel 1, in order to prevent the infiltration of water in the said space, and for additional securing, as mentioned above.

Of course, the glass sheet 101 may be a reflecting sheet.

Claims

1. The method of manufacture of panels (1) for the sheathing of building façades, according to which said panels (1) are formed by two glass sheets (101, 102) separated by an air chamber (103), and in which one of said glass sheets (101) is of greater dimensions than the other sheet (102), characterized by the fact that the said two glass sheets (101, 102) are at first connected together by means of a bead of mastic (3) applied on the facing sides of the two glass sheets (101, 102) at a certain distance (d) from the peripheral rim of the sheet (102) of minor dimensions, with the interposition between said two glass sheets of a spacing member (2), the thus obtained composite panel (1) being fastened to the supporting structure (5) of the building façade by mechanically securing the peripheral edges (104) of the sheet (102) of minor dimension of each panel (1) to a profiled element (6) associated to said supporting structure (5).
2. The method according to claim 1, in which said mastic (3) is structural silicone.
3. The method according to claim 1, in which said spacing member (2) is formed by a tubular frame.
4. The method according to claim 3, in which said tubular frame (2) is provided with passages communicating with the air chamber (103) of said panel.
5. The method of claim 4, in which said tubular frame (2) contains at its interior a suitable hygroscopic substance, and for instance silica

gel.

6. The method according to claim 1, in which said supporting structure, or said part associated to supporting structure is formed with a substantially C shaped profile (6), and the edges (104) of said panels (1) are accommodated into said profile (6).
7. The method according to claim 6, in which the said edges (104) of said panels (1) are inserted into said C shaped profiles (6) with the interposition of a suitable gasket (7) made of rubber or of a rubber like material.
8. The method according to claim 1, further comprising the step of sealing the gap between the peripheral edge of said external glass sheet (101) of said panels (1) and the facing side of said C shaped profile (6) by means of a suitable mastic (8).
9. The double glass facade panel (1) according to the method of claims 1 to 8.

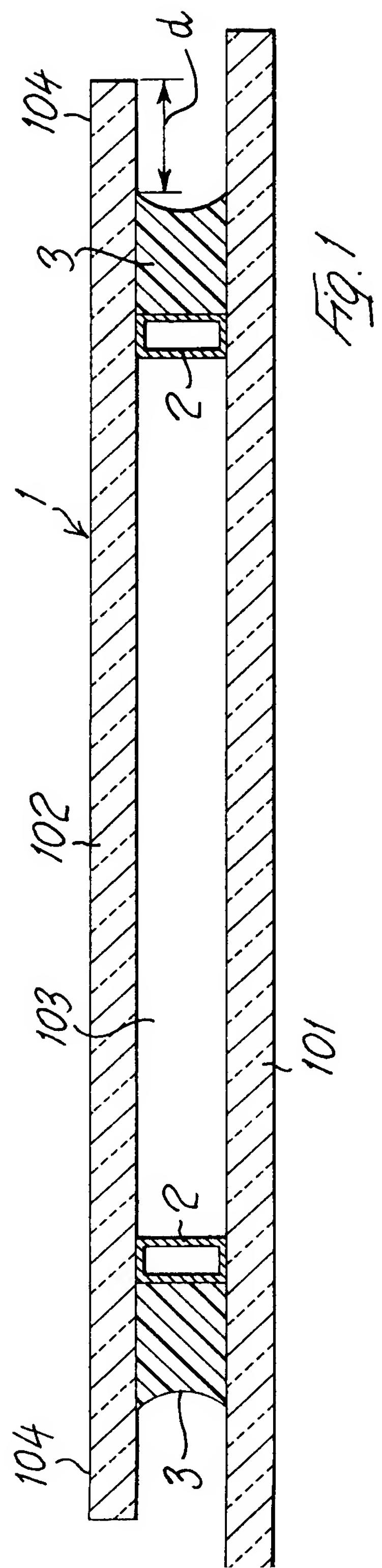


Fig. 1

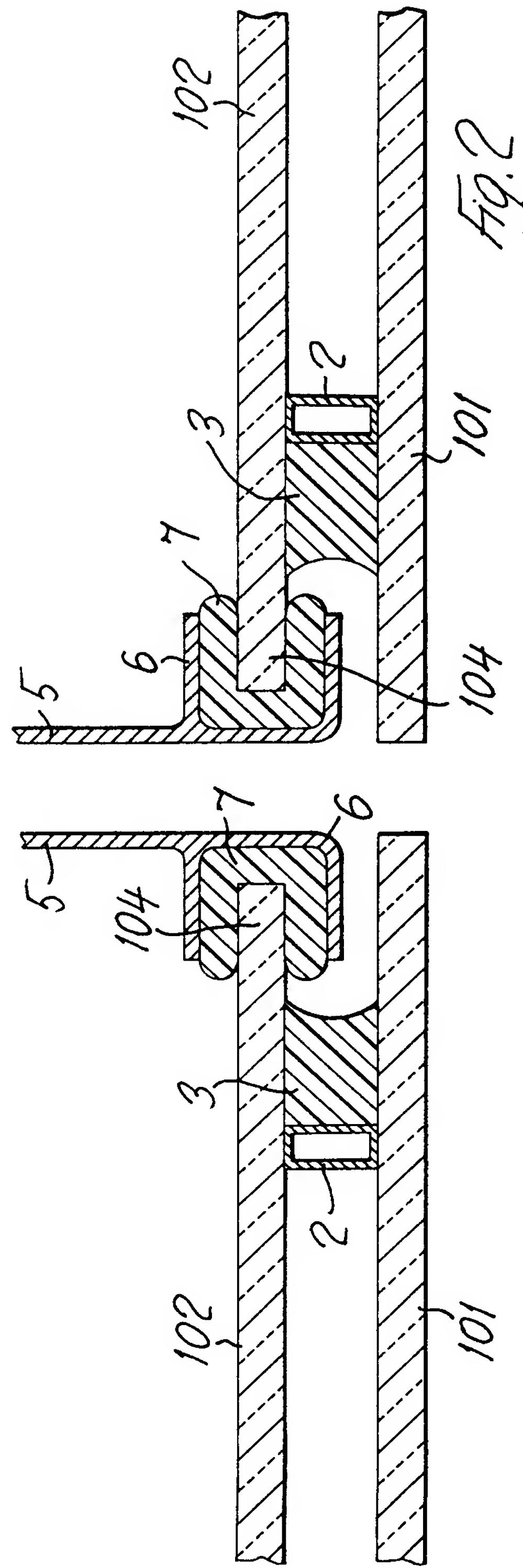
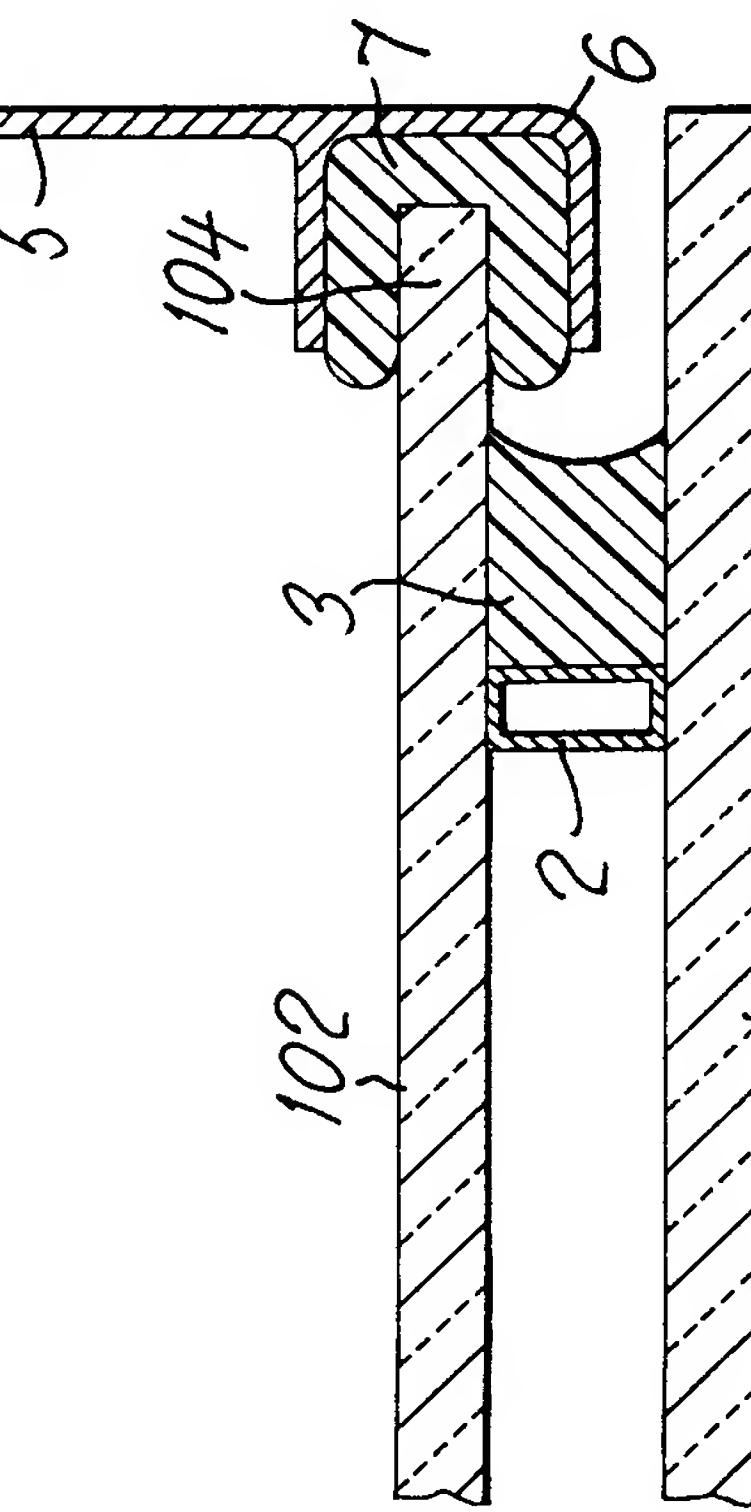
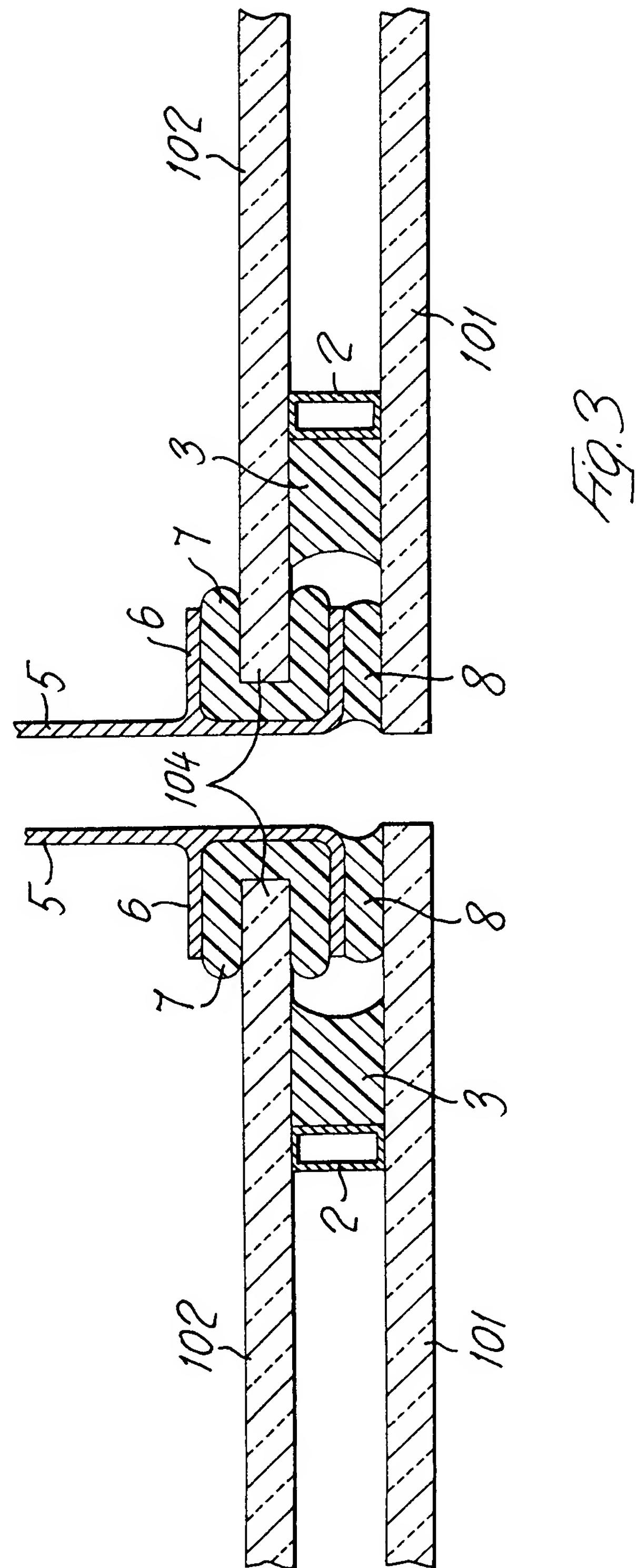


Fig. 2

101
104



101
104





European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 90 12 3292

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D, Y	GB-A-2 179 391 (DI COSTA) * the whole document * ---	1-3,6-9	E06B3/54 E04B2/96
Y	DE-A-3 626 194 (SCHUCO) * column 3, line 2 - column 4, line 27; figures * ---	1-3,6-9	
A	GB-A-2 167 110 (SCHUCO) * page 1, line 9 - line 130 * * page 2, line 26 - line 69; figures * ---	1,3,5,8, 9	
A	EP-A-395 040 (P.E. POLY ENGINEERING) * column 3, line 14 - column 4, line 41 * * column 5, line 6 - line 51 * * figures * -----	1,3,5-7, 9	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24 JULY 1991	DEPOORTER F.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		

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US-CL-CURRENT: 52/786.13

ABSTRACT:

The panels (1) are formed by two glass sheets

(101, 102) separated by an air chamber (103). One of said glass sheets (101) is of greater dimensions than the other sheet (102). The two glass sheets (101, 102) are at first connected together by means of a bead of mastic (3) applied on the facing sides of the two glass sheets (101, 102) at a certain distance (d) from the peripheral rim of the sheet (102) of minor dimensions, with the interposition between said two glass sheets of a spacing member (2). The thus formed composite panel (1) is fastened to a supporting structure of the building facade by mechanically securing the peripheral edges (104) of the sheet (102) of minor dimension of each panel (1) to a profiled element associated to said supporting structure. □